

PATCHFIX STRUCTURAL HB

High Strength Polymer Modified Cementitious Repair Mortar

PRODUCT

Bostik Patchfix Structural HB is a high strength high build polymer modified cementitious structural repair mortar.

DESCRIPTION

Patchfix Structural HB is a heavy-duty polymer modified high build structural repair reinstatement mortar with high ultimate compressive strength and abrasion resistance. The product is shrinkage compensated, which allows it to be used for vertical, horizontal and overhead application for large or small repairs.

RECOMMENDED USES

- Patching and repairing damaged concrete.
- Structural repairs in horizontal, vertical and overhead surfaces subject to high load bearing.
- Terraces, balconies and facades.
- Repairs where high compressive strength and abrasion resistance is required.
- Repairs to spalled concrete caused by corrosion of steel reinforcement.
- Repairs to damaged industrial flooring.
- High build application for repairs 10mm to 80mm on vertical substrates.
- Repairs to sewer tunnels, dams, bridges, power stations, concrete tanks.
- Reprofiling of worn areas.
- Repairing concrete areas subject to chemical corrosion.
- For below or above ground structures.
- In repairs where high resistance to chlorides and carbon dioxide is required.

FEATURES & BENEFITS

- Shrinkage compensated allows for long term dimensional stability.
- One component just add water and mix.
- High ultimate strength.
- High build repairs can be completed in a single application.
- Excellent workability.
- Easy to use.
- Excellent bond strength to concrete substrates.
- High abrasion and impact resistance.
- Low permeability provides protection from chloride attack and carbonation.
- May be coated with Bostik range of protective coatings.
- Extremely durable.
- High build repairs with exceptional performance characteristics.
- Reduces the need for formwork.
- Australian Made

PERFORMANCE PROPERTIES

COMPRESSIVE STRENGTH

Tested in accordance to AS10129.9, AS2073 @ 20°C

Age	Compressive Strength
1 day	26 MPa
3 days	42 MPa
7 days	50 MPa
28 days	60 MPa

FLEXURAL STRENGTH

Tested in accordance with ASTM C348-86 at 20°C

Age	Flexural Strength
1 day	3.7 MPa
3 days	8.3 MPa
7 days	9.2 MPa
28 days	10.2 MPa

BOND STRENGTH

Tested in accordance to ASTM C882 – 1987 Slant/Shear method

Age	Strength
7 days	> 10 MPa
28 days	> 15 MPa

SETTING TIMES

Vicat setting times at 20°C

Initial Set	20°C	2-3 hours
	30°C	1-2 hours
Final Set	20°C	4-5 hours
	30°C	2-3 hours

WORKING TIME

Temperature	Times (minutes)
10°C	50 – 65 minutes
20°C	45 – 55 minutes
30°C	30 – 40 minutes

APPLICATION THICKNESS

	Vertical	Horizontal
Minimum	10mm	10mm
Maximum	80 mm	100mm

ELASTIC MODULUS

26.0Gpa approx.

COEFFICIENT OF THERMAL EXPANSION

7 – 11 X 10⁻⁶ mm/°C

FRESH WET DENSITY

2130 kg/m³ approximately (tested in accordance with AS1012.5)

TRAFFIC TIME & OVERCOATING @25°C 50% RH

Foot Traffic	24 hours
Vehicle traffic	36-48 hours
Protective & architectural coatings application time	24 hours

APPLICATION TEMPERATURE

Minimum	5°C
Maximum	35°C

DRYING/SHRINKAGE

Tested in accordance with AS1012.13

Time (days)	Shrinkage (Microstrain)
7 days	<100 Microstrain
28 days	<300 Microstrain
56 days	<450 Microstrain

ABRASION RESISTANCE

Tested in accordance with ASTM C501 – 1984 (Taber Abrasion)

Age	Wear Index
28 days	116

COMPARISON CHART OF ABRASION RESISTANCE

Surface	Wear Index	Classification (resistance to wear)
Ceramic tile	142	Very high
(Bassalt) Bluestone	39	Poor
Concrete 30MPa	36	Poor
Concrete 60MPa	71	Low
Cast Iron	99	High

WATER REQUIREMENT PER 20 KG BAG

3.1 – 3.5 Litres

COVERAGE

A 20kg bag of Patchfix Structural HB with 3.5 litres of water will yield approximately 11 litres. 90 bags required per cubic metre. Approximate coverage is obtained if mixed in accordance with recommended procedures and accurately measured water content.

The recommended application thickness of Patchfix Structural HB is 10mm to 80mm for vertical application and 10mm to 100mm for horizontal applications.

For greater thicknesses Patchfix Structural FS can be built up in layers allowing each layer to dry prior to application of consecutive layer. Each layer is to be primed with Bostik Bond 'N' Cure prior to applying Patchfix Structural FS

PACKAGING

Patchfix Structural HB is supplied in a 20kg polylined bag.

APPLICATION INSTRUCTIONS

SUBSTRATE AND SURFACE PREPARATION

Saw cut or cut back the extremities of the repair locations to a depth of at least 10mm to avoid feather edging and to provide a square edge. Break out the complete repair area to a minimum depth of 10mm up to sawn edge. Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae. Where breaking out is not required, roughen the surface and remove any laitance by light scabbling or gritblasting. Steam cleaning, detergent scrubbing or the use of a proprietary degreaser should remove oil and grease deposits.

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition, paying particular attention to the back of exposed steel bars. Gritblasting is recommended for this purpose. Steel reinforcement should be coated with Techflow Epoxy Grout prior to application of repair mortar.

PRIMING

The substrate should be thoroughly soaked with fresh clean water and any excess removed prior to application of Patchfix Structural HB. It is essential to prime the substrate prior to application of Patchfix Structural HB. Prime substrate with Bostik Bond 'N' Cure by using a brush. Ensure primer has covered all exposed repair areas and allow primer to reach a tacky consistency prior to applying Patchfix Structural HB.

In exceptional circumstances, where the patch is to be subjected to damp or immersed conditions frequently or remains permanently wet, Bostik Techflow Epoxy Grout should be used as the primer on all pre-existing concrete surfaces including steel reinforcement. Contact the local Bostik office for further information.

MIXING

Care should be taken to ensure that Patchfix Structural HB is thoroughly mixed. Free fall mixers must not be used. Mixing of part bags should never be attempted. Full bags should be mixed. Patchfix Structural HB must be mixed with a mechanical forced action mixer with a high shear stirrer.

Add between 3.1 to 3.5 litres of clean water into the mixing vessel and with the mixer in operation, add one full 20kg bag of Patchfix Structural HB and mix for 3 to 5 minutes until fully homogeneous. Note: The powder must always be added to water. Dependant on the ambient temperature and the desired consistency, the amount of water required may vary slightly but should not exceed 3.5 litres per 20kg bag of Patchfix Structural HB.

DO NOT MIX BY HAND.

PLACING

Exposed steel reinforced bars should be firmly secured to avoid movement during the application process as this will affect mortar compaction, build and bond. Apply the mixed Patchfix Structural HB to the prepared substrate by gloved hand or trowel. Thoroughly compact the mortar onto the primed substrate and around the exposed reinforcement. Patchfix Structural HB can be applied up to 80mm thickness in vertical section, but up to 100mm thickness in smaller pockets or with the use of formwork. If formwork is used, it should have properly sealed faces to ensure that no water is absorbed from the repair material. In horizontal locations Patchfix Structural HB can be applied up to 100mm in thickness.

If sagging occurs during application to vertical surfaces, the Patchfix Structural HB should be completely removed and reapplied at a reduced thickness onto the correctly reprimed substrate. Note: the minimum applied thickness of Patchfix Structural HB is 10mm.

DO NOT ADD EXCESS WATER.

POT LIFE

Setting begins after approx. 45 minutes (at 25°C substrate and ambient temperature) and ends after another 50-55 minutes. Patchfix Structural HB should not be used after 55 minutes from time of mixing. The addition of water to the mortar after it has started to stiffen is not recommended, and the product should be discarded.

FINISHING

Patchfix Structural HB is finished by striking off with a straight edge and closing with a steel float. Wooden or plastic floats, or damp sponges may be used to achieve the desired surface texture. The completed surface should not be overworked.

LOW TEMPERATURE WORKING

In cold conditions down to 5°C, the use of warm water (up to 30°C) is advised to accelerate strength development. Normal precautions for winter working with cementitious materials should then be adopted. The material should not be applied when the substrates or air temperature is 5°C and falling.

HIGH TEMPERATURE WORKING

At ambient temperatures above 35°C, the material should not be used as this will cause premature setting and make working with the product difficult.

CURING

All cementitious-based mortars must be protected against excessive rapid surface drying and evaporation. Patchfix Structural HB must be cured immediately after finishing in accordance with good concrete practice.

The use of Bostik Bond 'N' Cure sprayed, brushed or rolled onto the surface of the finished Patchfix Structural HB in a continuous film, is recommended. Bostik Bond 'N' Cure should be applied at a coverage of 4-5m² per litre and should be applied immediately after final trowel. In very extreme temperatures and drying conditions, supplementary curing with polythene sheeting, taped down at the edges, may be required. Large areas should be cured as trowelling progresses (0.5m² at a time) without waiting for completion of the entire area.

APPLICATION OF COATING

Patchfix Structural HB when cured, has good resistance to water. However, if areas are subject to continuous water immersion or chemical attack from solvents or organic acids etc., Patchfix Structural HB should be protected using Bostik's range of coatings such as Guardcote WB, Epoxycote WB or Paveseal SB depending on aesthetic and performance requirements.

The required epoxy, or acrylic coating will act as a sealer and dust proofer which may be easily cleaned and is resistant to a range of oil and chemicals depending on the choice of coating. To ensure a long lasting highly protective coating, it is recommended that two coats be applied. The first coat should be applied 24 hours after the placement of Patchfix Structural HB. The second coat may be applied the following day in accordance with the selected coating's application instructions.

PRECAUTIONS

- Patchfix Structural HB should not be used when the temperature is below 5°C and greater than 35°C.
- Patchfix Structural HB should not be applied less than 10mm thickness in any given application.
- For concrete substrates subject to rising damp or moisture, a waterproof membrane is required. It is recommended that Bostik Techflow Epoxy Grout be used as a primer. (consult technical data sheet or Bostik office)
- New concrete surfaces must be at least 14 days old prior to application of Patchfix Structural HB.

- To avoid rapid drying protect applied Patchfix Structural HB from direct sunlight or drying winds during actual application, and while curing for up to 24 hours.
- If the substrate onto which Patchfix Structural HB is applied moves or cracks, reflective cracking will occur in the Patchfix Structural HB.

P.A.T.S (Pretested Adhesion To Substrate) Programme

Bostik offer a service in which a program has been established to eliminate potential field problems by pre-testing Bostik adhesives with samples of building materials to which the adhesive will be applied. This service is available on large projects where pre-application testing will aid in determining the proper surface preparation method to achieve optimum adhesion. Consult a Bostik representative for further information.

HEALTH AND SAFETY

Cement products are classified as hazardous under General Health and Safety guidelines, and materials containing Portland cement are alkaline in nature.

- During use avoid inhalation of dust, contact with skin and eyes.
- Wear suitable protective clothing, dust masks, gloves and eye protection should be worn.
- Continual or extended contact with cement products can cause skin irritation.
- If skin contact occurs, remove contaminated clothing and wash skin thoroughly for a minimum of 15 minutes and see a doctor.
- Contact Poison Information Centre on Ph: 13 11 26 Australia or consult medical advice.

For more detailed information refer to Material Safety Data Sheet.

CLEAN-UP

Patchfix Structural HB should be removed from tools and equipment with clean water immediately after use.

STORAGE

Patchfix Structural HB has a shelf life of approximately 8 months if kept in a dry environment completely away from moisture.

FIRE

Patchfix Structural HB is non flammable.

ITEM NO.	STOCK SIZE	COLOUR
PATCHFIX STRUCTURAL HB		
284556	20 Litre	Grey
BOND 'N' CURE		
286575	1 Litre Bottle	White
286588	5 Litre Bottle	White
TECHFLOW EPOXY GROUT		
267783	4 Litre Kit	Grey
267791	16 Litre Kit	Grey
MOISTURE SEAL		
263362	8 Litre Kit	Grey
263370	20 Litre Kit	Grey
EPOXYCOTE WB CLEAR		
289191	4 Litre	Clear
PAVESEAL SB		
289450	4 Litre	Clear
289469	20 Litre	Clear
GUARDCOTE WB		
289396	4 Litre Kit	Clear
289418	20 Litre kit	Clear

The representations and recommendations regarding the products are based on tests which we believe to be reliable. However, no guarantee of their accuracy can be made because of the great range of field conditions and variations encountered in raw materials, manufacturing equipment and methods. Thus, the products are sold with a limited warranty only, and on the condition that purchasers will make their own tests to determine the suitability of the product for their particular purposes. Under no circumstances will Bostik Australia Pty Ltd be liable to anyone except for replacement of the products or refund of the purchase price.

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FOR FURTHER INFORMATION



BOSTIK AUSTRALIA PTY LTD
 Phone: +61-3-9279 9333
 Fax: +61-3-9279 9240

BOSTIK NZ LIMITED
 Phone: +64-4-567 5119
 Fax: +64-4-567-5412

BOSTIK SINGAPORE PTE LTD
 Phone: +65-6863 4088
 Fax: +65-6863 4077

BOSTIK (MALAYSIA) SDN BHD
 Phone: +606 678 9788
 Fax: +606 678 9766

SYDNEY
 Phone: 02 8825 3488
 Fax: 02 8825 3411

ADELAIDE
 Phone: 08 8244 0511
 Fax: 08 8244 0522

PERTH
 Phone: 08 9331 7666
 Fax: 08 9331 7677

BRISBANE
 Phone: 07 3265 2377
 Fax: 07 3265 5421

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